THE RELATIONSHIP BETWEEN MEDICAL RESIDENTS' ATTITUDES TOWARD PSYCHOSOCIAL ISSUES IN PATIENT CARE AND PSYCHOSOCIAL INTERVIEW SKILL LEVEL FOLLOWING COMMUNICATION TRAINING PROGRAMS

By

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To the Behen family

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Central to the task of successful patient medical care is the quality of the relationship between physician and patient. A growing body of research has demonstrated that effective physician-patient communication is a goal that can be achieved through the development of teachable skills. The present study sought to examine the role of a variable thought to be important in the learning of clinical communication skills, specifically, physician attitudes toward psychosocial issues in patient care.

Based on recommendations from social psychological research on the attitude construct, the proposed study examined two components of physicians' psychosocial attitudes, beliefs toward psychosocial issues in patient care and behavioral intentions to carry out the behaviors

taught in communication training programs. The specific aims of the study were to assess the extent to which medical residents' psychosocial attitude components may change as a result of communication training and the extent to which any changes are maintained over time, and to clarify the relationship between residents' psychosocial beliefs and their behavioral intentions and interview skill level following training in communication skills.

Sixty-seven medical residents were randomly assigned to one of two communication training groups or a waitlist control group. Beliefs and behavioral intentions were assessed pre- and post-training and at follow-up. Interview skill was assessed following communication training. The results indicated that the components of residents' attitudes (beliefs and behavioral intentions) toward psychosocial issues in patient care did change as the result of brief psychosocially-oriented training interventions compared to a control group, and that the initial changes in residents' attitude components were maintained at follow-up assessment. The results also revealed that the attitude components did not relate to ability to demonstrate interview skill during a simulated patient interview.

The findings have implications for the training of medical residents in interviewing skills. Specifically, residency educators are likely to find that communication training programs with the goal of improving residents' interviewing skills may be most effective when the emphasis

is concurrently on both teaching residents specific skills involved in acquiring psychosocial information efficiently and accurately and emphasizing to residents the value of psychosocial information in patient care.

CHAPTER 1
REVIEW OF LITERATURE

Introduction

Central to the task of successful patient medical care is the quality of the relationship between physician and patient. A growing body of research has demonstrated that effective physician-patient communication and improved physician-patient relations are both goals that can be achieved through the development of teachable skills. However, despite the widespread acceptance that communication problems are common in medical practice and that the quality of clinical communication significantly impacts health outcomes, traditional medical education has proven generally ineffective in teaching clinical communication. This state of affairs calls for research to clarify the important variables involved in effective teaching of physician-patient communication skills.

The following review addresses the role of one such variable, physician attitudes toward psychosocial issues in patient care, as it may impact skill acquisition during communication training. Clarification of the role of this variable in physician training has implications both for the development of efficacious training methods and the selection of individuals for training opportunities. What

follows is, first, a literature review of physician-patient relations, communication training programs, relevant attitude theory, and empirical research which has investigated physician attitudes toward psychosocial issues in patient care. Second, a study is proposed to investigate the role of such attitudes in skill acquisition during communication training.

Overview of Physician-Patient Relations

The nature of the relationship between physicians and their patients has undergone extensive change in the last century. Currently, this relationship continues to evolve as the communicative processes between physicians and patients increasingly become a topic of interest and investigation.

Stoeckle and Billings (1987) have reviewed the process by which the physician-patient relationship has been gradually transformed by reforms within and outside the medical profession during this century. According to their review, obtaining the medical history has progressed from a discourse based primarily on interrogation about the patient's bodily feelings and medical facts as exclusive data needed in the search for disease. Reforms from psychiatry during the 1940s moved the relationship from simply fact-finding and history-taking to what could now be appropriately referred to as the medical interview. This change involved obtaining information that could be used in psychological treatment by the use of nondirective

questioning and explicitly including assessment of the patient's personality, emotional reactions, and interpersonal conflicts as part of the interview. During the 1970s behavioral and communication scientists, including clinical and social psychologists, helped transform physician-patient communication into an interaction that was even more explicitly psychotherapeutic, educational, and participatory. This was accomplished by teaching communication skills such as empathic responding to providers, attending to the factors involved in the communication of information between physician and patient, and highlighting the reciprocal nature of the communication process.

The evolution in physician-patient communication within the medical interview has resulted in common agreement about what the modern physician-patient relationship should entail. Educational texts, professional behaviors, and social attitudes each reflect how the current ideology of the relationship may be characterized (Stoeckle & Billings, 1987). The elements of the modern relationship include allowing the relationship to be more democratic by giving patients choices in decisions about the scope of diagnosis and the alternatives of treatment, developing patient participation in the relationship by transmitting appropriate information about illness and treatment which enables patients to make choices, and negotiating with patients about their requests and choices (Lazare, Eisenthal, Frank, & Stoeckle, 1976). It also involves

attending to patients' feelings about illnesses and treatment, and responding to their feelings with positive regard, genuine concern, and empathy; providing helping actions by eliciting, acknowledging, and responding to patients' own perspectives of their illness and care; conveying respect to patients without regard to their class, gender, race, ethnicity, or age; promoting health education, self-help, and preventive behaviors by communicating information about diagnosis, treatment, health maintenance, and prevention; and being self-reflective in the acts of questioning, listening, and talking in order to modulate the effect of the doctor's own feelings and prejudices and to reframe inquiries and responses to patients (Schon, 1983).

The current ideology of the physician-patient relationship has impacted medical interviewing approaches. Bird and Cohen-Cole (1990), Lazare (1989), and Lazare et al. (1990) have described a three-function approach to medical interviewing. These interview functions represent an operationalized application of a biopsychosocial approach designed to facilitate physician-patient communication processes. They suggest that the skilled physician must be able to accomplish several different objectives. The first function is to gather data to understand patients' problems. This involves collecting accurate information in an efficient manner. The second function is to develop rapport and respond to the patient's emotions. Demonstration of sufficient emotional support serves to relieve acute

distress and facilitate the development of trust. The third function is the education of patients about their illness and the development of patient motivation to adhere to treatment plans.

Physician-Patient Relations: Empirical Findings

Findings from reports investigating physician-patient relations suggest that the quality of current physician-patient interactions is often poor. Increasing public dissatisfaction with the medical profession is significantly related to deficiencies in the clinical communication (Simpson et al., 1991). It has been found that most complaints by patients deal with communication problems (Richards, 1990).

Several studies have shown that patients' visits are usually physician-centered rather than patient-centered. Platt (1979) referred to the "high control style" in which the physician asks many questions and maintains control over the interaction by not letting the patient speak at any length. Waitzkin (1984) noted that physicians often maintain a style of high control which involves many physician-initiated questions, interruptions, and neglect of patients' life circumstances. Research has suggested that language used by physicians is unclear to patients, both in terms of the use of jargon and in relation to a lack of the expected shared meanings of relatively common terms (Simpson, 1980).

Research has demonstrated that patients' concerns are frequently not addressed. Beckman and Frankel (1984) noted that physicians play an active role in regulating the quantity of information elicited at the beginning of the clinical encounter, and use closed-ended questioning to control the discourse. They reported that of 74 office visits studied, in only 23% was the patient provided the opportunity to complete his or her opening statement of concerns. In 69% of the visits the physician interrupted the patient's statement and directed questions toward a specific concern. They suggest the consequence of this controlling style is the premature interruption of patients, resulting in the loss of relevant information. Frankel (1984) found that 94% of physician interruptions resulted in the physician's taking charge of the conversation. Burack and Carpenter (1983) found that such an approach prevented physicians from learning all but 6% of primary problems that were ultimately determined to be psychosocial.

The educational needs of patients have been found to be unmet during physician-patient interactions. Fletcher (1980) reported that up to 60% of patients have been found to be dissatisfied with information provided by physicians. Waitzkin (1984) suggested that physicians tend to underestimate patients' desire for information and misperceive the process of information-giving, resulting in a low proportion of visits with physicians that includes patient education.

During recent decades, contributions from the social, behavioral, and communication sciences have improved the diagnostic, educational, and therapeutic potential of the medical interview (Stoeckle & Billings, 1987). Overall, studies have found the quality of physician-patient interactions to be related to the quality of patient care and positive health outcomes. Specifically, effective interviewing skills have been associated with a variety of positive effects.

Improved physician-patient relations has been demonstrated to increase patient satisfaction. In a meta-analysis of correlates of provider behavior in medical encounters, Hall et al. (1988) found that satisfaction had the most consistent relation to physician behavior. Satisfaction was found to be related to information giving, technical and interpersonal competence, partnership building, immediate and positive nonverbal behavior, social conversation, positive talk, and more communication overall.

Enhanced physician-patient communication has been found to result in improved accuracy of diagnosis. A series of studies by Cox and his colleagues (1981) suggested that physician use of open-ended questions and allowing patients to express their concerns resulted in better quality factual information on which to base diagnostic decisions. Goldberg (1980, 1982) found that primary care physicians trained in interview skills using videotape feedback were better able to make accurate diagnoses. Roter and Hall (1987) found

greater use of open-ended questions to be related to increased patient disclosure of medical information. Kaplan, Lipkin, and Gordon (1988) argued that establishing a therapeutic relationship with patients is critical to both diagnosis and treatment.

Patient compliance has been shown to increase as a result of improved physician-patient communication. Hall's (1988) meta-analysis demonstrated that compliance was associated with information provision by physician, fewer physician questions overall (but more questions about compliance in particular), more positive talk, and less negative talk. Additional evidence suggested compliance was increased when providers took a more dominant role.

Effective physician interviewing skills have been demonstrated to have beneficial effects on patient education. Hall's (1988) meta-analysis suggested that patient recall and understanding were best predicted by information giving, less question asking, more partnership building, and more positive talk. Other researchers report that more recall and understanding are also related to technical competence (Roter, Hall, & Katz, 1987), interpersonal competence (Bartlett, Grayson, & Barker, (1984), fewer direct orders (Heszen-Klemens & Lapinska, 1984), more immediate nonverbal behaviors (Larsen & Smith, 1981), and less negative talk (Carter, Inui, & Kukall, 1982).

Enhanced physician-patient communication has been shown to influence favorable health outcomes. Greenfield, Kaplan, and Ware (1985) demonstrated that an intervention which increased patient involvement in the interaction with the physician resulted in fewer limitations imposed by disease on patients' functional ability, and also increased preference for active involvement in medical decision making. Kaplan (1989) found that "better health," measured physiologically, behaviorally, and subjectively, was consistently related to specific aspects of physician-patient communication, including more patient control, expression of affect, and information provision. Orth, Stiles, Scherwitz, and Hennrikus (1987) demonstrated that reduction in blood pressure was significantly greater in patients who, during visits to the doctor, had been allowed to express their health concerns without interruptions. Agreement between physician and patient in identifying the nature and seriousness of the clinical problem has been related to improving or resolving the problem (Bass, Garland, & Otto, 1986).

Improved physician-patient interaction has also been found to have positive benefits for physicians. Researchers have reported that improving physician-patient relations results in making medical practice more professionally rewarding (Almy, 1989; Gerber, 1987) and in a decreased number of malpractice suits (Altcheck, 1988).

Professional medical organizations have affirmed that the teaching of interviewing skills and the psychosocial content of patient care are essential aspects of physician training. The American Board of Internal Medicine (1983) issued a statement describing and outlining the humanistic qualities required of the internist and guidelines for their evaluation in practice. The Society of General Internal Medicine, through its Task Force on the Medical Interview (Lipkin, Quill, & Napodano, 1984), published a model curriculum for teaching interviewing skills to internal medicine residents. Other medical organizations calling for such training include the American Board of Family Practice, the Association of American Medical Colleges, and the American Board of Pediatrics (1987).

Communication Training Programs

In the past fifteen years there has been a proliferation of efforts to teach interviewing skills and the psychosocial dimension of medical practice to medical students and residents. Among programs that have been developed, there exists a considerable amount of variation in content, quantity, teaching methods, organization, faculty responsible for training, financial support, training setting, and evaluation. Overall, the methods that have been used have been shown to improve trainee performance (Kern et al., 1989).

The quality of evaluations of training programs within the literature is highly variable. Problems with

evaluations include the failure to use objective measures of training effectiveness, not keeping trainees blind to evaluations, failure to use a control group, insufficient reliablity and validity of trainee performance assessment measures, and lack of generalizability to other settings.

Kern et al. (1989) reviewed training programs which were randomized controlled evaluations in order to identify which educational methods demonstrated effectiveness. He suggested that among those investigations yielding positive results, the most commonly used educational method was feedback based on a trainee's performance. Feedback was typically used in these programs in combination with videotape reviews, audiotape reviews, live observations of role playing, or trainee interactions with real or simulated patients. Supplemental training methods often included discussion, didactic sessions, provision of readings or syllabus, role modeling, or videotaped examples.

Research has evaluated the impact of training on patient care outcomes. Four randomized controlled studies have demonstrated effectiveness of training programs with respect to patient variables. Goldberg et al. (1980) found that training improved the ability of physicians to assess accurately their patients' psychologic distress. Evans and colleagues (1987) reported that satisfaction was greater and anxiety less among patients of trained physicians. Cope and coworkers (1986) found patient satisfaction to have improved with physician training. Roter et al. (1990) found trained

residents asked more open-ended questions and fewer leading questions, summarized main points more frequently, did more psychosocial counseling, and were rated as having better communication skills than untrained residents. The use of more focused and psychosocially directed questions and fewer leading questions was associated with more accurate diagnosis and management recorded in the medical chart.

Attitude Theory

The attitude construct has a long and influential history in the field of psychology, particularly social psychology. Unfortunately, the study of attitudes in the health professions has utilized this research only to a limited extent. In order to avoid following this trend, relevant issues and background concerning the attitude construct is provided.

Attitude Definition

The study of attitudes and attitudinal processes has long preoccupied social scientists. Despite the concept's influential history, consensus on precisely what an attitude is and how it can be identified has proven to be somewhat elusive (McGuire, 1985). However, among researchers on human attitudes, there is agreement generally that an attitude or combination of attitudes involves a set or state of readiness or willingness that predisposes an individual to respond with certain verbal and/or other behaviors under certain conditions; and that attitudes are learned, and relatively enduring (Tinker, 1991). The most prominent

feature of an attitude is its evaluative character, the disposition to respond toward an object in a positive or negative manner. Attitudes can thus range from very favorable to very unfavorable on an evaluative continuum (Ostrum, 1984).

Various attempts have been made to conceptualize the components of human attitudes, and to develop theory and research about these factors. Rosenberg (1965) popularized the view that attitudes are composed of three classes of response (affective, cognitive, and behavioral) to a stimulus, or attitude, object. They suggested that an attitude consists of how we feel, what we think, and what we are inclined to do about an attitude object. Azjen (1984) noted that attitude is a hypothetical, unobservable construct which must be inferred from measurable responses that reflect evaluations of an attitude object. He distinguished between three categories of such responses, including cognitive, affective, and conative responses. Cognitive respones are beliefs that reflect the individual's perception of, and information about, the attitude object. Affective responses are evaluations of, and feelings toward, the object. Conative responses are behavioral intentions, tendencies, and actions with respect to the object. Zimbardo and Leippe (1991) emphasized that the interconnectedness of attitudes, which are typically the most important component of attitude systems, cognitions, affect, behavioral intentions, and behaviors into organized systems

allows for changes in one facet of the system to often cause changes in other facets.

A competing approach to attitude definition focuses on conceptualizing attitudes as consisting of a single component. Researchers have approached this issue from divergent perspectives, each of which emphasizes either affect, cognition, or behavior. An early definition by Thurstone (Thurstone & Chave, 1929) suggested that attitudes consist of evaluative or affective responses to attitude objects. Fishbeck and Azjen (1975) have popularized this one-component view by proposing that affective responses are based upon cognition, specifically beliefs. Zajonc (1980) proposed that affect can be the basis for one's attitudes and preferences. Bem (1972) has emphasized that attitudes are often inferred from past behaviors, taking into account the conditions under which the behavior was performed.

Thus, the literature on attitudes is marked by two conflicting definitions. Zanna and Rempel (1988) have attempted to reconceptualize the attitude construct to address these definitional issues. They view their reconceptualization as an attempt to take existing notions in the literature and combine them in a new and heuristically useful way. They define attitude as the categorization of a stimulus object along an evaluative dimension. They propose that such evaluation can be based upon three classes of information: 1) cognitive information, 2) affective information, 3) information

concerning past behaviors. They suggest that these classes of information can determine evaluations separately or in combination. An advantage of this model is that it specifies conditions for when a particular class of information may be a more relevant focus of study. Specifically, it suggests that when evaluations are based on beliefs about the attitude object, the model should be reduced to a one-component formulation such as that proposed by Fishbein and Ajzen (1975). When evaluations are based primarily on affects associated with the attitude object, the model should resemble the one-component formulation of Zajonc (1980). Finally, when evaluations are based on inferences from past behavior, the model should be similar to that proposed by Bem (1972).

Attitude Formation

Azjen (1984) has identified three separate approaches social scientists have taken to studying attitude formation. The earliest of these is a functional approach which attempted to identify the origins of attitudes based on the needs or functions that attitudes serve. Functions which attitudes were assumed to provide include instrumental (allowing individuals to attain rewards and avoid punishments), knowledge (serving to organize and simplify one's experience), expressive (enabling emotional release), and ego-defensive (protecting and enhancing the self). The major limitation of this approach is argued to be its circularity of reasoning in that attitude related needs are

inferred from the attitudes people are known to hold, and then these inferred needs are used to explain the observed attitudes.

The second approach to understanding attitude formation is followed by behaviorally oriented scientists. This approach bases attitude development on principles of classical conditioning. Specifically, repeated and systematic association between the attitude, or conditioned stimulus, and a positively or negatively valued event, the unconditioned stimulus, is assumed to produce a favorable or unfavorable affective reaction, or attitude, to the object.

The third approach toward attitude formation, the cognitive approach, has followed the general trend toward cognitive, information-processing explanations of social behavior. This approach stresses the role of information as a basis of attitude formation. According to this view, beliefs, which represent one's subjective knowledge of oneself and his world, are the primary determinants of attitudes. Generally, the ratio of the number of beliefs which associate the object with positive attributes to those which associate the object to negative attributes determines the resultant attitude.

Attitudes and Behavior

The attitude construct has typically been used to explain social behavior. Given that attitudes are considered behavioral dispositions, it follows that they are assumed to direct, and to some extent, determine action.

However, it was not until the 1960's that the assumption that attitudes can be used to predict and explain behavior was empirically challenged. In his review of the research exploring this issue, McGuire (1985) asserted that only within limited circumstances do attitudes account for more than 10% percent of behavioral variance.

Azjen (1984) has reached a more optimistic conclusion regarding the relationship between attitudes and behavior. He noted that as a result of the negative evidence about the relationship, researchers were forced to reexamine the nature of attitude and its relation to behavior. He suggested that renewed recognition that attitude is an unobservable, hypothetical construct which must be inferred from measurable responses to the attitude object resulted in increased understanding. He suggested that as attitudes and actions are both expressions of an underlying disposition, a strong empirical relation can only be expected if measurements of each assess exactly this common disposition. Therefore, he concluded that general expressions of attitudes are found to be strongly related to aggregate measures of behavior when such is the case, and attitudes are usually found to be quite accurate predictors of subsequent actions.

Attitude Assessment

Davis and Ostrom (1984) have presented theoretical issues to consider when assessing attitudes. They suggest that in carrying out an attitude assessment the researcher

must specify the following: First, the attitude object; second, the conceptual attributes of the attitude construct relevant to the aims of the research; and third, the response domain. The attitude object refers to any of a variety of behaviors, ideas, concepts or entities which may be specific and concrete, refer to a social category, or be broad and abstract. The attitude construct refers to the operational definition of attitude on which the study relies. The response domain refers to the three categories of response identified by attitude researchers: affective responses which refer to feelings and physiological reactions one has to the attitude object, cognitive responses including information, beliefs, and inferences made about the object, and conative responses which refer to the behaviors one initiates or intends to initiate in regard to the attitude object.

Attitudes Toward Psychosocial Issues in Patient Care: Empirical Studies

During the past forty years attitudes of physicians in training and the extent to which they change over the course of the educational experience has been investigated. A common purpose of these studies has been to understand those characteristics which predispose to effective medical practice.

Early psychological investigations focused on whether medical students' psychosocial attitudes changed during the course of medical school. These studies described the

presence or absence of attitude change generally through the use of standardized multidimensional personality inventories such as the Jackson Personality Inventory (Rosenberg, 1965) and the Minnesota Multiphasic Personality Inventory (Glaser, 1951). Student attitudes on authoritarianism, cynicism, dogmatism, compassion, and humanitarianism were of particular interest in these studies. Results typically indicated that medical school had an adverse effect on student attitudes. Studies suggested that students tended to increase in cynicism and decrease in humanitarianism during their medical school experience (Eron, 1958; Christie & Merton, 1958; Gordon & Mensh, 1962). Other research indicated that although such change was notable, the students' attitudes were situational in nature and developed as a reaction to the medical school environment (Becker & Geer 1958; Fox, 1957; Reinhardt & Gray, 1972). Attempts were also made at this time to influence students' attitudes in more positive directions through more comprehensive training programs which exposed students to psychosocial issues (Merton, Reader, & Kendall, 1957; Reader & Gross, 1957; Hammond & Kern, 1959). Findings of these programs suggested that attitude changes which resulted were short-lived. Overall, early research on student attitudes suggested that medical school contributed to the development of negative attitudes toward psychosocial issues in students and that attempts to reverse this trend were typically unsuccessful (Rezler, 1974).

More recent investigations have continued to examine the attitudes of medical students. These studies differ from their predecessors in that they tend to use attitude scales rather than personality tests. This approach is based on the idea that valid measurement requires test items which are specific to the relevant environment (Parlow & Rothman, 1974). Additionally, this research has addressed issues including whether attitudes change with certain interventions, how attitudes differ between various medical and health professionals, and what correlates exist for different types of attitudes.

Research investigating whether interventions during training can change medical students' attitudes has provided equivocal results. Blizek and Finkler (1977) reported no changes in medical student attitudes towards human values after a course on moral problems of medicine. Markham (1979) failed to find changes in medical students attitudes toward patients and physician-patient relations after a behavioral science course as initially negative view were maintained. However, Maisiak et al. (1980) found that first-year medical students attitudes toward the social and behavioral determinants of patient health, although initially positive, did improve after a behavioral science course. The results of the study suggest that such a course affects both students' attitudes and knowledge toward psychosocial issues. Dornbush (1984) reported that initial attitudes of medical students were positive, and that these

remained positive after an in-depth clinically and humanistically oriented course in the behavioral sciences. In a follow-up study Dornbush (1985) reported that initially positive attitudes of medical students toward psychosocial issues had been maintained during the course of medical school. Zeldow (1987a) reported evidence that students who enter medical school with adequate levels of compassion and nurturance leave with these qualities intact, while those who enter deficient in these qualities complete their medical school training no more patient-oriented than when they matriculated. Dwyer, Detweiler, & Kosch (1988) found psychosocial attitude scores to improve pre- to post-intervention with third-year medical students following a four week family practice rotation. De Monchy (1988) found medical students in their final year of study to be more patient-centered than students at earlier stages of training.

Fewer studies of psychosocial attitudes and attitude change have taken place at the residency level of training. Shapiro (1991) studied changes in self-assessed resident psychosocial attitudes and behavior after participation in a month-long behavioral science rotation. The findings suggested that certain basic psychosocial assessment skills, especially those that residents initially evaluated themselves as lacking, could be successfully taught through a structured format. However, lack of clinically significant improvement in terms of attitude change

suggested the limitation of using this format for such a purpose. Yet, it was evident that residents assessed themselves as having an initially positive orientation toward psychosocial issues in medicine. Smith et al. (1991) reported that an intensive, comprehensive month-long training program which focused on communication and relationship-building skills with first-year residents resulted in improved attitudes toward psychosocial issues toward patient care compared to a control group. Rich (1987) reported that residents had initially positive attitudes toward physician-patient relations at the onset of residency, and that this remained over the course of the entire residency.

The attitudes of physicians-in-training and practicing physicians toward psychosocial aspects of patient care have been compared to other health professionals. Medical students appear to be more similar to dentistry and pharmacy students and less similar to nursing and social work students with respect to attitudes toward doctor-patient relations (Parlow & Rothman, 1974). Medical students have been found to demonstrate equal or greater concern on attitudes to issues of prevention and doctor-patient relationships compared to other student groups (Ewan, 1987). Different medical specialties have been found to vary in their nurturant-empathic attitudes toward patients with psychiatric residents having the most positive attitudes, followed by pediatric residents, and then surgical residents

(Roskin & Marell, 1988). Medical specialties have also been found to differ with regard to attitudes toward the importance of psychosocial aspects of patient care. Levinson, Kaufman, and Dunn (1990) found academic general internists and psychiatrists to be significantly more psychosocially oriented than practicing internists and surgeons. Ashworth, Williamson, and Montano (1984) found that out of four specialties assessed, psychiatrists were the most psychosocially-oriented, followed by family physicians, pediatricians, and internists.

Recent research has studied attitudinal correlates of medical students. Streit (1980) found that in medical students positive attitudes toward psychosocial issues in medicine were negatively correlated with a relatively closed value system and positively correlated with empathy, sensitivity, and expedience. Zeldow (1987b) found that medical students who scored high on positive attitudes toward doctor-patient relations were liked and respected by their classmates, knowledgeable about the behavioral sciences, and described themselves as warm, caring, and tolerant of ambiguity, while placing a premium on rapport with patients. Low scorers were more concerned about appearing calm and in control of their feelings and the situation and emphasized emotional and interpersonal detachment in their relations with patients. Dwyer et al. (1988) found that female gender, planning to enter a primary

care specialty, and having a doctor-parent were correlated with higher psychosocial attitude scores.

In summary, the research on physicians-in-training attitudes toward psychosocial issues suggests that this population's attitudes are generally positive, vary between specialties and other professions, and have particular correlates. Less clear is the extent to which attitudes may change with psychosocially-oriented interventions, and whether such changes are maintained over time. Also unaddressed by this body of research is the relationship between attitude and skill acquisition during psychosocially-oriented training programs. However, while these findings do indicate that physician attitudes are an important topic upon which to focus, conclusions from this body of research must be tempered as a result of methodological limitations.

Methodological Considerations

While the aforementioned findings involving physicians-in-training's psychosocial attitudes appear promising, conclusive statements regarding the role of such attitudes are not possible as a result of the various methodological problems which characterize this area of study. Specifically, research findings are limited by the following problems: First, few studies have included the necessary controls by using an experimental design. Research in this area has been either quasi-experimental or correlational in design. As a result, studies have been subject to the

threats to internal and external validity which accompany those designs. Second, studies which directly assess attitudes toward psychosocial issues using measures with acceptable reliability and validity have been the exception rather than the norm. A significant percentage of the studies in this area have used the approach of developing their own attitude measures. Recently, a measure, the Physicians' Belief Scale, which objectively describes where a physician falls on a dimension of acceptance versus rejection of psychosocial tenets in medical care and which has acceptable reliability and validity has been developed. Finally, researchers have not been guided by the findings from social psychological research regarding the attitude construct which has accumulated over the past several decades. A reconceptualization of the attitude construct by Zanna and Rempel (1988) recently has emerged which incorporates the main ideas of past conceptualizations in a way that capitalizes on the strengths of several of the most prominent, current models and provides a framework for future research.

Proposed Model

Effective communication with patients requires the physician to be able to accomplish several objectives during an interview. The skilled physician must be able to collect accurate information efficiently, demonstrate emotional support, educate the patient, and encourage adherence. Thus, the behavior of the physician during an interview has

various instrumental purposes. Research findings suggest that when behavior was undertaken for instrumental purposes, evaluations about attitude objects were best predicted by beliefs about the attitude objects (Miller & Tessar, 1985). As noted earlier in this review, Zanna and Rempel (1988) recommend that when evaluations about an attitude object are based on beliefs, the model should be reduced to a one-component formulation such as that proposed by Fishbein and Ajzen (1975).

The Fishbein-Ajzen model (1975) emerged in the mid-1970's and has continued to guide attitude research since that time. The foundation of their conceptual framework is provided by their distinction between beliefs, attitudes, intentions, and behaviors. The major concern of the conceptual framework is the relationships between these variables.

Beliefs serve as the fundamental construct in the conceptual structure. Specifically, belief is a probability judgement that links an object or concept to some attribute. The sum of an individual's beliefs serves as the informational base which ultimately determines the person's attitudes, intentions, and behaviors.

In this model an attitude is a bipolar evaluative judgement of the object. It is essentially a subjective judgement of general evaluation or feeling of favorableness or unfavorableness toward an object. Specifically, one's attitude toward an object is based on his/her salient

beliefs about that object. An individual's attitude is determined by his/her beliefs that the object has certain attributes and by his/her evaluations of those attributes. This framework suggests that a person's attitude is related to the set of beliefs about the object but not necessarily to any specific belief.

An intention is a probability judgement that links the individual to some action. Intentions to perform a particular behavior result from the individual's attitude toward the behavior and the person's subjective norm concerning the behavior. As with a belief, the strength of an intention is indicated by the person's subjective probability that he will perform the behavior in question. The term behavior refers to observable acts of the subject that are studied in their own right.

The current study sought to use two of the variables suggested by the Fishbein-Ajzen model, beliefs and behavioral intentions, and assess their relationship to resident behavior following communication training programs. Specifically, the beliefs were those involving psychosocial issues in patient care. The behavioral intentions refered to intentions to carry out the behaviors taught by the programs.

Specific Aims and Hypotheses

This study sought to build upon the body of research that exists regarding physicians' attitudes as well as to address questions previously unaddressed empirically.

Despite the attention that has been paid to physicians' attitudes toward psychosocial issues during their training, the relationship between attitudes and skill development has remained relatively unexamined. It seems likely that such physician attitudes may be related to the development of effective communication skills. Residents who believe that psychosocial issues are important in patient care may be more motivated to participate in training programs that teach methods for enhancing competence in communication. Residents may also more readily acquire the skills presented in such programs. If residents believe that skill in handling the psychological care of patients is a natural, untrained ability possessed by individuals, they are probably less likely to become engaged in learning activities designed to bolster skills in this area (Levinson, Kaufman, & Dunn, 1990). The specific aims of this study were to assess the extent to which residents' psychosocial attitudes changed as a result of communication training and to clarify the relationship between resident physician attitudes toward psychosocial issues in patient care and interview skill level following training in communication skills. Additional aims of the study were to evaluate whether residents who volunteered to paricipate in the communication training programs differed from those who did not and to assess the maintenance of attitudes at follow-up.

The specific hypotheses for the study were the following:

1) Residents who participated in the communication skills training programs would differ in their beliefs toward psychosocial issues in patient care from residents who did not volunteer to participate. It was predicted that the residents who participated in the study would score in a more psychosocially oriented direction on the beliefs toward psychosocial issues measure than residents who did not volunteer to participate.

2) It was predicted that the three experimental groups would differ in belief change from before the training interventions to after the interventions. Specifically, it was anticipated that the affect + content group would show the greatest changes, followed by the content group, and then the control group.

3) It was predicted that the differences hypothesized in number two above would be maintained at three month follow-up.

4) It was predicted that there would be positive relationships between beliefs and skill level following training within each of the training groups and between behavioral intentions and skill level following training within the affect + content group.

5) It was predicted that there would be differences in the relationship between beliefs and skill level following training between each of the three groups. The affect +

content group would show the strongest relationship, followed by the content group, and then the control group.

CHAPTER 2
METHOD

Subjects

The subjects were 67 medical residents recruited from various divisions within the residency training programs at Shands Teaching Hospital. The mean age of participants was 30.5 (*SD*=4.1, range 24 to 45), and the mean year of residency was 3.0 (*SD*=1.6). The sample was predominantly male (50 or 75%) and Caucasian (51 or 76%; African-American 6 or 9%, others 10 or 15%). Slightly over half of the residents were single (35 or 52%). Residents from 13 internal medicine specialties comprised the largest group of residents (32 or 48%), followed by pediatrics (19 or 28%), psychiatry (14 or 21%), and surgery (2 or 3%). Residents were solicited through three articles in the Shands Housestaff Newsletter, three mailings of project descriptions to all housestaff, letters to all Residency Training Directors and all Chief Residents, posters displayed in all clinics in which medical and surgical residents provided clinical services, and personal interactions by research personnel at rounds and on hospital units. For their participation in the study, the residents each received $100. Table 1 provides demographic information on the residents for each experimental group. An

additional 28 residents, matched on type of training program, level of training, and gender, were recruited to complete pre-training and demographic questionnaires in order to assess the possibility of sample bias.

Table 1
Demographics of Residents by Group

	Male:Female Ratio	Mean Age (SD)	Mean Years in Residency	Specialty Medicine: Pediatrics: Psychiatry: Surgical (n)
Group 1 (Control)	14:6	30.3 (3.6)	3.05	10:4:5:1
Group 2 (Content)	18:6	31.0 (5.7)	3.29	11:8:5:0
Group 3 (Content + Affect)	18:5	30.3 (3.1)	3.00	11:7:4:1

Materials

The materials used in this study included two physician self-report measures and a behavioral coding system. These included the following:

The Physician Belief Scale (Ashworth, Williamson, & Montano, 1984)

The PBS is a 32-item, rationally developed, self-report scale designed to measure beliefs about psychosocial aspects of patient care held by physicians. The instrument objectively describes where a physician falls on a dimension of acceptance versus rejection of psychosocial tenets in

medical care. The development of the scale was based upon a theoretical framework concerning the physician's role, what the patient wants, and physician's reactions to their patients as people. A pool of 79 statements was developed using these categories as starting points and presented to 180 physicians. Statistical characteristics of the initial data were used to reduce the item pool to only those items that would best differentiate among respondents. Twenty-two items were deleted for reasons of abbreviated range of response or low variability. Following a factor analysis, twenty-five items were deleted due to negative average intercorrelations or having loaded on unique factors. The final set was 32 items scored individually on a five point Likert scale of "disagree" to "agree." Scale scores could range from 32 (maximum degree of psychosocial orientation) to 160 (minimum psychosocial orientation). The total score on this measure for each respondent was used for this study.

Ashworth et al. (1984) reported an internal consistency analysis of their sample which resulted in a reliability coefficient of $\underline{r} = .88$, suggesting a highly internally consistent scale with individual items tapping the same dimension. The average scale score was 74.3 with scores following an approximately normal distribution. The average item variance was .86 and average inter-item correlation was $\underline{r} = .19$.

Construct validation of the PBS was carried out by comparing scores across internal medicine specialties

(Ashworth et al., 1984). Physicians from four disciplines obtained scale scores congruent with expectations regarding the psychosocial orientations of those disciplines. The results indicated that the measure has the ability to differentiate among respondents. Concurrent validity has been demonstrated by comparing the Physician Questionnaire (Levinson, Dunn, Parker, & Kaufman, 1988) with the PBS. The correlation of the two measures was found to be $r = .69$.

Behavioral Intention Questionnaire

The BIS is a 24 item questionnaire rated on a 5 point Likert scale from "never" to "always" which asks physicians to rate to what extent they would take time in the interview to carry out behaviors in a medical interview that are the focus of the training programs. The individual items are based on specific skills that are directly taught during the content and affect modules of training. This measure takes into consideration the need for physicians to determine priorities during an interview due to time limitations. This measure was developed for use in this study. It has a range of scores from 24 to 120. The total score was used for the purposes of this study. Only the content + affect group received this measure. This decision was made to ensure that the other two experimental groups were not exposed through this questionnaire to skills that were taught in modules in which they did not participate.

Physician Rating Scale

This measure is a behavioral coding system which was developed for this project. It was used to assess each physicians' skill level during a videotaped interaction with a simulated patient following training. The effect of the training program on physician skill was assessed by videotaping an interview between the physician and a simulated patient. The simulated patient was a professional actress who was carefully coached by a physician and a psychologist to present physical symptoms of diabetes onset and to exhibit the initial emotional sequelae of receiving a diagnosis of chronic illness. The interviews were videotaped and then scored by two graduate research assistants intensively trained to use the direct observation system developed for the project by the research team. This direct observation system allowed scoring of the use of specific skills that loaded into a Total score and a Summary score for each of nine subdomains of skill attainment. The items being rated are behaviors that fall into the following subdomains of skills: introductory skills, eliciting information, active listening, nonverbal behaviors, demonstration of respect for the patient, genuineness of interaction, communication of empathy to the patient, information giving, and closing skills. The Total score for each physician was used for this study. Interobserver agreement statistics were used to estimate numerically the extent to which the two graduate research assistant raters

agreed on the domains being rated. As the ratings were based on session totals, the Pearson product-moment correlation was used to assess interobserver agreement. The ratings of the two raters correlated at r=.79 for the total score. It was determined a priori to randomly select one of the raters for use as the criterion. Rater 1 was thus selected. Appendix A provides a correlation matrix of results comparing Rater 1, Rater 2, and the averages of both raters. This table indicates that the findings were the same for both raters and the averages of the two raters.

Training Program

The present investigation was part of a larger study the purpose of which was to develop, implement, and evaluate communication skills training programs designed for physicians at the residency level of training. The project was funded by a grant provided by the Arthur Vining Davis Foundation and carried out by a research team comprised of personnel from the Departments of Clinical & Health Psychology and Medicine at the University of Florida.

The training modules that were designed integrated existing research on effective communication strategies and incorporated methods of teaching that have been demonstrated to maximize learning potential. Two training modules were developed, one designed to train content-oriented communication skills and one designed to train additional affect-oriented communication skills. Each of the two training modules had three major components: didactic

presentation of specific skills, videotaped vignettes of physician-patient interactions, and behavioral rehearsal and feedback through supervised trainee roleplays.

A lecture format with slide presentation was chosen for the formal didactic component of the modules. The skills covered in each training module were included after a careful review of the extant literature on communication interactions in health care settings. The lectures were written to delineate specific skills and to provide clear explanations of the functions of each skill presented. At the end of each didactic presentation, an extended physician-patient interview was provided on videotape and participants rated the physician's use of the skills discussed using a checklist given to them by the instructor. This checklist detailed the structural and stylistic components of good interviewing discussed in that lecture, providing a final review of the skills covered in the didactic presentation.

Interspersed throughout the didactic presentation were videotaped vignettes of physician-patient interactions that demonstrated the skills discussed in the lecture presentation and that also presented examples of "failures" to communicate if the skills were not used. Actors for the films were chosen through formal auditions after advertising in local and campus newspapers for experienced actors. The realism of the vignettes was assured by recruiting an experienced R.N. to produce written scripts that represented

likely practitioner-patient interactions. These scripts were then reviewed by a physician on the research team to affirm medical integrity of the content. Professional editing and production of the vignettes was provided by the University of Florida's Learning Resource Center.

The third component of each module was behavioral rehearsal involving roleplays in which the resident received direct feedback and coaching from both the instructor and other residents in the training group. Roleplays were conducted in triads, with each small group member sequentially playing the roles of physician, patient, and observer. The observer for each roleplay completed a checklist that incorporated all skills that should be demonstrated during the interaction. After the interview was complete, all members of the triad critiqued the interaction using the observer's checklist and notes as a guide.

The format of the program was as follows. The 67 residents were assigned to one of the three experimental groups. Random block assignment was used to ensure that specialty (medical, surgical, psychiatric, and pediatric), level of resident training (as indicated by years in residency), and gender were evenly distributed across the three groups.

All groups, with the exception of the control group, participated in three ninety minute training sessions. These sessions were led by faculty of the University of Florida

(four psychologists and one physician) supported by four graduate and three undergraduate research assistants. Those assigned to the content + affect group attended a ninety minute session which focused on content skills. The components of this session included a didactic lecture on content-related skills, videotape models of appropriate and inappropriate physician communication skills, and group discussion. This group then attended a session which focused on the development of affect-focused physician communication skills, which used a similar outline. The third part of this program was a ninety minute roleplaying/behavioral rehearsal session during which residents broke into groups of three and practiced the skills taught in the previous two sessions.

Those assigned to the content group attended a session which focused on content skills identical to that provided to the content + affect group, a ninety minute control session during which residents viewed three videotaped vignettes used in the affect module and discussed how content-related skills were used by the physician (designed to equate the time spent "in training" between the two groups), and a ninety minute roleplaying/behavioral rehearsal session during which they practiced the skills taught in the first session.

In order to accommodate the work schedules of the residents, six content-focused modules, six affect-focused modules, six review sessions, and seven

roleplaying/behavioral rehearsal sessions were conducted over the span of eight months.

Those assigned to the control group did not receive any training, however, they did receive the entire assessment battery.

Design and Procedure

Data collection for the study occured at three separate times: prior to training, following training subsequent to evaluation of skill acquisition, and beginning at three month follow-up. The study was carried out in the following phases:

1) Residents completed self-report questionnaires at the time of recruitment.

2) The residents were randomly assigned to one of three groups: a content-only training program, a content + affect-training program, and a waitlist control group. Residents assigned to the training groups were then trained.

3) Following training each resident was videotaped conducting an interview with a simulated patient. The videotape was coded to assess the skill level following training of each resident. At this time residents once again completed the self-report questionnaires to assess any changes in attitude (beliefs and intentions measures).

4) Three months following the conclusion of the training programs residents once again completed the attitude questionnaires. Questionnaires were sent to the residents

via interdepartmental mail and returned in the same manner. Residents who did not return the questionnaires at this point were contacted through subsequent mailings and again asked to complete and return the questionnaires.

5) Following the final training session a matched group of residents who did not participate in the training was recruited to complete the Physician Belief Scale. The residents were matched on specialty, gender, and level of training. Questionnaires were sent to the residents via interdepartmental mail and returned in the same manner. A total of 130 residents were sent questionnaires. 28 returned completed questionnaires for a response rate of 22 percent.

CHAPTER 3
RESULTS

Statistical analyses served several primary purposes. First, the sample of residents who agreed to participate in the training program was compared to a matched group of residents who did not participate to assess the potential for sample bias. Second, analysis of variance tests, with covariates as appropriate, were conducted to examine differences between training groups on belief and intention change from pre- to post-training and at follow-up. Third, correlation and multiple regression analyses were carried out to determine the relationships of beliefs and intentions and skill level following training within groups and the differences of such relationships between groups.

The Kolmogorov-Smirnov Goodness of Fit test was used to test the assumption that the scores for the Physician Belief Scale, the Behavior Intention Scale, and the Physician Rating Scale were normally distributed in the population. The hypothesis that the scaled scores approximated normal distributions was not rejected for any of these measures ($p>.05$, $n=67$, ($n=23$ for BIS)). Table 2 presents the means and standard deviations for all measures by group and for the total sample.

Table 2
Means, and Standard Deviations for Study Measures by Group and for Total Sample

	PBS-pre (SD)	PBS-post (SD)	PBS-diff (SD)	PRS (SD)
Group 1 (Control) n=20	61.45 (12.62)	68.35 (15.40)	6.90 (8.98)	25.05 (6.1)
Group 2 (Content) n=24	70.33 (12.41)	66.29 (13.70)	-4.04 (9.16)	34.04 (5.68)
Group 3 (Affect) n=23	75.26 (15.69)	70.26 (14.95)	-5.00 (8.95)	34.48 (6.90)
Total n=67	69.37 (14.59)	68.27 (14.53)	-1.10 (10.34)	31.51 (7.47)

	BIQ-pre	BIQ-post	BIQ-diff
Group 3 (Affect) n=23	92.57 (10.63)	102.30 (9.32)	9.74 (6.73)

Note.
PBS-pre = Physician Belief Scale pre-training
PBS-post = Physician Belief Scale post-training
PBS-diff = Physician Belief Scale post - pre training
PRS = Physician Rating Scale
BIQ-pre = Behavior Intention Scale pre-training
BIQ-post = Behavior Intention Scale post-training
BIQ-diff = Behavior Intention Scale post - pre training

Participants versus Nonparticipants

The first hypothesis of the study suggested that residents who participated in the communication skills training programs would differ in their beliefs about

psychosocial issues in patient care from residents who did not volunteer to participate. It was anticipated that residents who participated in the study would score in a more psychosocially oriented direction on the beliefs measure. A paired sample t-test was conducted to test for differences in beliefs (as measured by the PBS) between residents who participated in the training program and a matched group of residents (matched on gender, specialty, and level of training) who chose not to participate. The results indicate that the two groups (training group $\underline{M}$=68.77, $\underline{SD}$=16.04, matched group $\underline{M}$=67.12, $\underline{SD}$=16.67) did not differ in beliefs about psychosocial issues in patient care $\underline{t}$(df=27)=-.41, $\underline{p}$=.68.

ANOVAS and ANCOVAS

The second hypothesis of the study stated that the three experimental groups would differ in belief change from before the training interventions to after the interventions. It was hypothesized that the affect + content group would demonstrate the greatest changes, followed by the content group, and then the control group. An ANOVA performed on the pre-training PBS indicated significant differences between the three experimental groups $\underline{F}$(2,64)=5.54, $\underline{p}$=.006. Therefore, an ANCOVA was conducted to test for differences between the three groups on belief change pre- to post-training as assessed by the Physician Belief Scale (PBS). The ANCOVA method was chosen to control for the significant differences that emerged

between the three groups on the pre-training PBS. The post-training PBS score was used as the dependent variable, group membership and pre-training PBS score were used as independent variables, with pre-training PBS score used as a covariate. The results of the ANCOVA suggested that significant differences existed between groups in belief change from before the training programs to after the programs $F(2, 63)=7.41$, $p<.001$. Both the content group ($t(df=42)=3.9$, $p<.001$) and the content + affect group ($t(df=41)=4.34$, $p<.001$) significantly differed from the control group in belief change from pre- to post-training. There was no significant difference between the content and the content + affect groups ($t(df=45)=.36$, $p=.72$) in belief change. Paired sample t-tests within each group on pre-training beliefs to post-training beliefs indicated that the content ($t(df=23)=2.16$, $p<.05$) and content + affect ($t(df=22)=2.68$, $p<.01$) groups became significantly more psychosocially oriented, while the control group became less psychosocially oriented ($t(df=19)=-3.4$, $p<.01$) from before to after training.

The second part of this hypothesis, that the content + affect group would demonstrate a significant increase in behavioral intentions from pre- to post-training, was tested with a paired sample t-test. This group did demonstrate a significant increase in behavioral intentions ($t(df=22)=4.49$, $p<.001$).

The third hypothesis of the study stated that the differences in belief change would be maintained at three-month follow-up. Table 3 presents the means and standard deviations for the attitude measures (PBS and BIQ) by group for the subset of residents who completed follow-up questionnaires.

Table 3
M, and SD for Study Measures by Group for Residents Who Completed Follow-up Questionnaires

	PBS-pre	PBS-post	PBS-fu	PBS-diff2
Group 1 (Control) n=11	63.18 (11.02)	70.82 (15.53)	71.46 (14.41)	8.27 (7.49)
Group 2 (Content) n=16	69.19 (12.75)	64.81 (13.91)	66.18 (14.65)	-3.00 (7.49)
Group 3 (Affect) n=11	74.09 (18.41)	71.00 (19.69)	68.82 (16.26)	-5.27 (13.49)
	BIQ-pre	BIQ-post	BIQ-fu	BIQ-dif2
Group 3 (Affect) n=11	89.64 (12.78)	103.09 (11.05)	99.00 (10.92)	9.36 (7.28)

Note.
PBS-pre = Physician Belief Scale pre-training
PBS-post = Physician Belief Scale post-training
PBS-fu = Physician Belief Scale follow-up
PBS-diff2 = Physician Belief Scale follow-up - pre-training
BIQ-pre = Behavior Intention Scale pre-training
BIQ-post = Behavior Intention Scale post-training
BIQ-fu = Behavior Intention Scale follow-up
BIQ-dif2 = Behavior Intention Scale follow-up - pre-training

For the residents who completed the follow-up questionnaires, an ANCOVA was conducted to test for the maintenance of belief change differences between groups at follow-up. As with the previous hypothesis, the ANCOVA method was chosen to control for the significant differences that emerged between the three groups on the pre-training PBS. The follow-up PBS score was used as the dependent variable, group membership and pre-training PBS score were used as independent variables, and pre-training PBS score was used as a covariate. The results of the ANCOVA suggest that significant differences existed between groups in belief change from before the training programs to follow-up several months after the programs $F(2,34)=4.87$, $p<.01$. Both the content group ($t(df=25)=3.8$, $p<.001$) and the content + affect group ($t(df=20)=2.9$, $p<.01$) significantly differed from the control group in belief change from pre-training to follow-up. There was no significant difference between the content and the content + affect groups ($t(df=25)=.56$, $p=.58$). Paired sample t-tests within each group on pre-training beliefs to follow-up beliefs indicated that the content ($t(df=15)=1.6$, $p=.13$) and content + affect groups did not become significantly more psychosocially oriented, although the control group became significantly less psychosocially oriented ($t(df=11)=-3.65$, $p<.01$) from before training to follow-up. Additionally, the content + affect group demonstrated a significant increase in behavioral intentions from pre-training to follow-up as suggested by

the results of a paired sample t-test ($t(df=10)=-3.42$, $p<.01$).

Correlation and Regression Analyses

The fourth hypothesis of the study stated that there would be a positive relationship between beliefs and skill level following training within each of the experimental groups and between behavioral intentions and skill level following training within the affect + content group. Pearson correlations were obtained to assess the relationship between beliefs and intentions and skill level following training. Table 4 presents the correlation matrix for these variables.

Table 4
Correlation Matrix for Beliefs, Intentions, and Skill Level Following Training

	Skill Level Following Training (PRS Total Score)
Beliefs	
Group 1 (Control)	
PBS-pre	-.09
PBS-post	-.13
PBS-difference	-.09
Group 2 (Content)	
PBS-pre	.20
PBS-post	.12
PBS-difference	-.10
Group 3 (Affect)	
PBS-pre	-.12
PBS-post	-.19
PBS-difference	-.10

Table 4. continued

Total	
PBS-pre	.19
PBS-post	-.06
PBS-difference	-.36*
Intentions	
Group 3 (Affect)	
BIQ-pre	-.35
BIQ-post	-.14
BIQ-difference	.23

*p<.01

The lone signicant result involved the entire sample of residents. An increase in psychosocial orientation from pre- to post-study was related to higher skill level following training (r=-.36, p=.003). However, this finding was not significant with the Bonferroni adjustment to control for Type 1 errors in multiple comparisons (p=.18). The physicians' beliefs and intentions, measured prior to and subsequent to training, were not significantly related to skill level following training for any of the groups or the total sample.

The fifth hypothesis of the study purported that there would be differences in the relationship between beliefs and skill level following training between each of the three groups. It was suggested that the affect + content group would show the strongest relationship, followed by the content group, and then the control group. A multiple regression analysis with a dummy variable to code for group

membership was used to test for differences in the relationship between beliefs and skill level following training. A cross-product interaction term (PBS-pre x group) was included in the regression equation to test for differences between groups. Physician Rating Scale Total score was the dependent variable, with PBS-pre and group membership as independent variables. The results of this analysis revealed a nonsignificant regression equation. Evidence of interaction between the independent variables did not exist, $F(2,61)=.65$, $p=.52$, thus indicating no significant differences between groups in the relationship between beliefs and skill level following training.

CHAPTER 4
DISCUSSION

This was an investigation of medical residents' attitudes toward psychosocial issues in patient care, how components of such attitudes, specifically beliefs and behavioral intentions, relate to interview skill development in communication training programs, and whether these components of attitudes change as a result of communication training. This study was guided by the findings from and the framework provided by social psychological research on the attitude construct.

The first hypothesis of the study positted that residents who participated in the study would report beliefs that were more psychosocially oriented than a matched control group of residents who chose not to participate. This hypothesis was not supported. The finding indicates that residents who volunteered to participate in the four and one-half hour, three session, communication training program for an honorarium of $100 had a similar level of psychosocial orientation toward patient care as residents who did not volunteer to participate in the training program, but who agreed to fill out a brief questionnaire assessing level of psychosocial orientation. This suggests that the sample of residents who participated in the

communication program may not be a sample biased toward a psychosocial orientation to medical care, but rather may be representative of the total sample of residents informed of the opportunity to participate in the study. This implies that the findings of this study may be generalized further than if this sample of residents proved to be biased.

The finding that the trained group of residents did not differ from the matched group is limited by the fact that both the trained residents and the matched residents voluntarily agreed with the request to participate by at least completing a questionnaire. These two groups together may differ from the group of residents who did not agree to both the request to take part in the training program and the request to fill out the questionnaire. Research which included responses from the group of residents who refused to volunteer to either participate in the training or to complete the attitude questionnaire would clarify this issue. In order for such data to be collected, residents would have to be in a position where they were required to complete the questionnaire, a liberty this project did not have.

The second hypothesis of the study proposed that the three experimental groups would differ in belief change from pre- to post-training. It was hypothesized that the content + affect group would show the most change, followed by the content group, and then the control group, which was not expected to show any change. The hypothesized differences

were accurate for comparisons between each of the training groups and the control group, but not so for the comparison of the two training groups. The findings indicate that components of medical residents' attitudes toward psychosocial issues in patient care can change as the result of brief psychosocially-oriented training interventions. The belief change of residents in both communication training groups of this study from pre- to post-training was significantly more psychosocially directed and oriented in comparison to the control group. Additionally, the behavioral intentions of residents in the content + affect group changed significantly in the direction toward carrying out the behaviors taught by the training programs. These findings imply that influencing medical residents' attitudes in a more psychosocially oriented direction, as has been a goal of medical education training, is indeed attainable.

Although the results indicated that the components of attitudes did change as a result of the training programs, less clear is what the factors are that caused the changes. One explanation of the changes is to emphasize that by altering the residents' behavior through the practice of specific behavioral skills which were central components of the training program, i.e. roleplaying, behavioral rehearsal, and simulated exercises, modifications in the beliefs and behavioral intentions were effected. By acting in a particular manner in accordance with some skill, more fundamental attitudinal adjustments may be created which

will serve to maintain that type of behavior in the future. A second approach would suggest that the attitude components were altered during the training as a result of verbally transmitted information which was communicated as part of the didactic lecture format. What seems most likely is that a combination of these factors produced the changes in the beliefs and behavioral intentions. The relationships between the beliefs, behavioral intentions, and behaviors may be bidirectional in nature. Specifically, changes in the residents' cognitive structures (beliefs and intentions) likely influenced their behavior to change, at the same time that changes in the residents' behaviors influenced alterations in their cognitive structures. This interactionist approach maintains that behavior is best accounted for as an interactive function of external stimuli and person variables (i.e. cognitions). Which of these factors may have the most powerful influence on the others is unclear from the results of this study. The design of the study does not make it possible to make conclusive statements regarding the directionality of the relationship between the cognitive structures and the behaviors as both training groups used the same teaching format, which included both didactic and behavioral components.

The attitude change results are consistent with those of Smith et al. (1991) which found that a much more intensive, comprehensive month-long training program which focused on communication and relationship-building skills

with first-year residents resulted in improved attitudes toward psychosocial issues toward patient care compared to a control group. Both studies used beliefs as the attitude component of interest, utilized pre- and post-study evaluation of the beliefs, and included a control group in the study design. However, the current study extends the findings of Smith et al. through the use of an experimental design with random group assignment, a belief measure with demonstrated reliability and validity, a wider range of resident specialties, and a much briefer training program.

The finding that components of psychosocial attitudes of residents can change as a result of training provides empirical validation of the idea that the period of residency training is an important time to influence physicians. Consider Principle Four of the Four Principles Regarding Humanistic Qualities of the Internist Adopted by the American Board of Internal Medicine: The ability to affect attitudes, behavior patterns, and moral conduct in medical care should be recognized and utilized during the residency training - a unique experience that is not available at other times in medical education (Merkel, Margolis, & Smith, 1990). The present study confirms that this is indeed possible.

The finding of significant differences between each of the training groups and the control group is limited by the significant differences that emerged between each of the groups on the belief scale pre-training. As random block

assignment was employed in the assignment of residents to groups, it was not expected that such differences would exist. Although the statistical analyses which revealed the differences in belief change between the groups controlled for the pre-training belief scale differences, it is worthwhile to understand what may have contributed to this initial divergence. At least three explanations may account for this unexpected finding. First, the differences could be the result of the relatively small sample size of each group. Second, the differences may be a reflection of different response sets which characterized each group. The control group may have been more likely to respond to items in a positive direction than the two training groups. This may be a result of being paid an honorarium despite not being required to participate in the training. As a way of ensuring minimal cognitive dissonance between beliefs which accompanied their decision to complete the questionnaire and their beliefs which were assessed on the questionnaire the control residents may have been more likely to endorse items in a positive direction. The content and content + affect groups may have been less likely to respond to items in a positive direction as a result of having to fill out an additional questionnaire (the Behavioral Intention Questionnaire) which was not required of the content group. Additionally, the two training groups likely experienced less cognitive dissonance as they had less need to justify their beliefs since they had agreed to participate to a much

greater extent in the study. Third, a combination of these two factors may have resulted in the pre-training belief scale differences.

The hypothesized difference in belief change between the two training groups of this study was not confirmed. Various possible explanations exist for this result. First, it may be that the factors which resulted in belief change were present in each of the training programs. Although the training program sought to directly teach the affect-focused skills (demonstration of empathy, respect, and genuineness to the patient, understanding nonverbal communication, active listening skills) to only the affect group, it is possible these skills were indirectly modeled during the process of teaching the content-oriented skills. In other words, affect-oriented and content-oriented skills may not be as easily separated as anticipated prior to training the residents, and the amount of content overlap between the two training groups may have prevented detectable differences between the two groups from emerging. Second, the measure used to assess beliefs may not be sensitive to components of affective change taught to the content + affect group as it focuses on beliefs rather than feelings. The present study could have included a more direct affective measure, specifically a subjective judgement of general evaluation or feeling of favorableness or unfavorableness toward psychosocial issues in patient care, as proposed by the Fishbein-Ajzen model discussed earlier. Including such a

measure may have helped to clarify such differences between the two groups.

The third hypothesis of the study proposed that the differences between the three experimental groups in belief change would be maintained at follow-up. Specifically, it was purported that the content + affect group would continue to show the most change, followed by the content group, and then the control group, which was not expected to show any change. The hypothesized differences were accurate for each of the training groups and the control group, but not so for the comparison of the two training groups. The findings suggest that changes in components of medical residents' attitudes toward psychosocial issues in patient care which result from brief psychosocially-oriented training interventions can be maintained over time. The belief change of residents in both communication training groups of this study from pre-training to follow-up was significantly more psychosocially directed and oriented in comparison to the control group. Although within each of the training groups belief change failed to reach significance, this may have been due to the relatively small sample size of residents who completed the follow-up questionnaires, as the differences for each of the training groups approached significance. Additionally, the behavioral intentions of residents in the content + affect group changed significantly as assessed at follow-up in the direction toward continuing to carry out the behaviors taught by the

training programs. These findings imply that not only is it possible to influence medical residents' attitudes in a more psychosocially oriented direction, but that changes in such attitudes can be maintained over time.

The attitude maintenance results are consistent with those of the Smith et al. (1991) study mentioned earlier. That study assessed 13 of 28 trained resident at 15 month follow-up and found that no significant decline in attitudes toward psychosocial medicine had occurred from post-training to follow-up. The current study extends the finding of Smith et al. through the use of an experimental design with random group assignment including a control group as part of the assessment at follow-up.

The finding of significant differences between each of the training groups and the control group on the psychosocial belief scale at follow-up is limited by the number of residents who participated at follow-up (38 out of 67). The sample was smaller than planned and limited the statistical power of the analysis. Moreover, it is possible that agreeing to return the study questionnaire at follow-up is a reflection of a positive attitude toward the study and may have resulted in a biased sample. However, this issue appears to have been adequately controlled for by the use of an experimental design with a control group. Additionally, the pattern of results at follow-up is similar to that which emerged immediately post-training, which further suggests that sample bias was not an issue at follow-up.

The fourth hypothesis of the study proposed positive relationships between the attitude components, beliefs and behavioral intentions, and skill level (for the control group) and skill level following training (for the trained groups). The results of the Pearson correlations do not support the hypothesis that there would be a positive relationship between physicians' beliefs and skill level within each of the groups and between behavioral intentions and skill level within the affect + content group. This suggests that residents' beliefs about psychosocial issues in patient care (for residents in each of the experimental groups) and residents' intentions to carry out skills taught in the training program (for the content + affect group) are not related to interview skill level (for the control group) and interview skill level following communication training (for the two trained groups). These findings indicate that improved attitudes towards psychosocial information do not correspond to an increased ability to demonstrate interview skill during a simulated patient interview.

The finding of the lack of a relationship between components of psychosocial attitudes and interview skill level and interview skill level following communication training is consistent with research previously carried out at the medical student level. Dwyer et al. (1988) examined the relationship between third year medical students' psychosocial attitudes and the ability to elicit and use effectively psychosocial information during a medical

interview conducted during a family practice rotation. By the use of a correlational design they found that medical students' psychosocial attitudes were not related to their ability to accurately assess patient reliance on social networks, patient compliance, and patient income. The current study extends these previous findings by its use of an experimental design with random assignment and the incorporation of a control group, the assessment of resident physicians at a level of training more advanced than medical students, the inclusion of a range of specialties, and a direct assessment of interview skill rather than inferring skill through information communicated during the interview.

The finding of the current study that residents' components of psychosocial attitudes do not relate to interview skill level and the finding of the Dwyer et al. (1988) study taken together have implications for medical education programs. As these findings suggest that improved attitudes towards psychosocial issues in patient care do not necessarily correspond to an increased skill in effectively conducting a medical interview, medical educators may need to reassess the content and focus of psychosocial interventions in medical training. Whereas much previous research and training has focused on characteristics affecting attitudes toward psychosocial issues, inferring that such attitudes are acceptable surrogates for demonstrated ability, the present findings indicate that

measures of psychosocial attitudes are not an acceptable substitute for proven measures of physician skill.

Although other findings of the present study (specifically that beliefs and intentions change from pre- to post-training) support the idea that demonstrating to residents the valid diagnostic use of psychosocial interviewing skills does have an effect and should be emphasized in residency training, such a focus on attitude components does not appear to be sufficient. Communication training programs at the residency level should be encouraged to focus on specific communication skills which are aimed at increasing interviewing proficiency. It is clear from present and previous research findings that attitudes do not necessarily reflect ability and that research and training programs should progress beyond equating these two discrete variables. Residency communication training programs should aim toward procedures that teach residents simultaneously the value of psychosocial issues in patient care and how to effectively acquire such information efficiently and accurately through specific interviewing skills. Williamson, Smith, Kern, Lipkin, Barker, Hoppe, & Florek (1992) have provided recommendations for training residents in the psychosocial aspects of medicine and the medical interview which takes into consideration the importance of distinguishing between specific skills and attitudes. Indeed, the current study exemplifies how psychosocial attitudes and behavioral

interiewing skills can each be influenced through clearly defined techniques.

The present finding may be limited by measurement problems. Specifically, attitudes (beliefs and intentions in the present study) and behaviors (reflected in the interview skill level assessment) can only be expected to be related when the underlying disposition of which they are expressions is measured adequately. This study emphasized beliefs based on the assumption that cognitive information, rather than affective information, would best define attitude for the present study. Such an assumption was made for the current study a priori based on the recommendation by Zanna and Rempel (1988) that beliefs best predicted behavior when the behavior was undertaken for instrumental purposes, i.e., gathering information during a medical interview. These authors also note that when behavior was performed for consumatory, noninstrumental purposes (affectively driven), it was better predicted by attitudes based primarily on feelings. What the findings of the present study may suggest is that the distinction Zanna and Rempel make between instrumental and noninstrumental purposes may not be so clear-cut. As a result the present study, by not including a measure that directly assessed the affective component of attitudes toward psychosocial issues, may not have adequately assessed the underlying disposition that would allow for a correlation between attitudes toward psychosocial issues and interview skill level. Indeed, the

present findings may reflect that the information gathering process of the medical interview is much more affectively driven than cognitively driven. Specific research needed to clarify this issue would require that the three postulated sources of attitudes (cognitions, affects, and behaviors) be measured separately and each included in research directed at understanding psychosocial attitudes of medical residents. The present study, consistent with previous research of physicians and physicians in training, did not assess the affective component of attitudes adequately. Moreover, the lack of emphasis on the affective component of psychosocial attitudes in patient care is evident in that existing measures focus exlusively on beliefs. Measurement techniques for the affective component of attitudes, which could include asking physicians in training to directly rate relevant feelings, have not been developed or utilized in this body of research.

The fifth hypothesis of the study positted that there would be differences in the relationship between attitude components and skill level following training between each of the three groups. No such differences emerged from the statistical analyses. This finding indicates that an interaction effect between training program and the pre-training levels of beliefs and intentions did not exist for any of the three groups. This finding is limited by the lack of any significant relationships between the attitude components and skill within any of the three groups. Given

the findings of the previous hypothesis, specifically, that for none of the groups did a positive relationship emerge between attitude components and skill level, the finding of the present hypothesis is not unexpected. The likelihood that differences will emerge between groups becomes less when significant relationships within any groups do not emerge. Future research into the issue of interactions between residents' psychosocial attitudes and types of training programs would be best carried out once relationships between these variables have been established.

The overall findings of this study have general implications for theory, research, and practice. Theoretically, the results indicate that for attitudes toward psychosocial issues in patient care it is not clear how the three classes of information postulated by Zanna and Rempel (1988) to determine an attitude (cognitive information, affective information, and information about behavioral intentions) combine to develop this particular type of attitude for medical residents. This study did not sufficiently address this issue, as it followed suggestions from previous research which emphasized the importance of beliefs in the formation and assessment of attitudes. In retrospect, an approach which made an a priori assumption that beliefs are the predominant class of information in the determination of the attitude was premature. Research into psychosocial attitudes toward patient care has not demonstrated that such an assumption is accurate. At this

stage of reseach into this type of attitude, all three sources of information should be assessed. A more complete approach to understanding the roles of these three classes of information would have included measures to assess each class for each of the three experimental groups.

With respect to research, the current study has implications in the areas of design and measurement. In terms of design, the present study included findings which confirmed results previously found with weaker quasi-experimental or correlational designs. The results of this study lobby for the continued use of stronger designs, such as the experimental design in this case, that yield more conclusive results. In terms of measurement, the present study highlights the need for a more comprehensive approach to the assessment of psychosocial attitudes which includes measurement of the cognitive, affective, and behavioral components of attitudes concurrently. To date, only within the cognitive domain have measures with established reliability and validity been developed. The findings of the present study emphasize the need for reliable and valid assessment of the affective and behavioral domains of psychosocial attitudes, as well.

With respect to practice, the present findings have direct implications for medical education involving the training of interviewing skills. These implications were discussed in depth earlier in this section, and bare repeating again. Medical educators may want to pay

attention to these findings as they suggest ways for the goals of effective physician-patient communication and improved physician-patient relations to be achieved. Educators may want to alter their training programs to incorporate the present suggestions aimed at improving the teaching of interviewing skills. Specifically, residency educators are likely to find that communication training programs with the goal of improving residents' interviewing skills may be most effective when the emphasis is concurrently on both teaching residents specific skills involved in acquiring psychosocial information efficiently and accurately and emphasizing to residents the value of psychosocial information in patient care. This suggestion may also be generalizable to physicians and physicians-in-training at various levels of training.

A discussion of the findings of the present study would be incomplete without consideration of general methodological limitations. For this study these limitations generally come from decisions made about how to conduct the study and problems that emerged when conducting it. In terms of external validity, the disproportionate number of psychiatrists and pediatricians who participated in the study (49%) may limit the generalizability of the findings to other residency specialties, especially as these two specialties tend to score in a more psychosocially-oriented direction than other specialties (Appendix B). Another issue having to do with the external validity of the

findings involved the generalizability of the simulated patient interview. While the use of this method allowed for excellent experimental control it does raise the issue of whether the skill level assessed in this artificial setting is generalizable to a clinical interview. In terms of measurement issues, the reliance on self-report measures for the assessment of the attitude components may limit the findings. Although this approach is typical for research into psychosocial issues in patient care, it does emphasize the need for alternative methods of assessing such attitudes with this population, such as the "bogus pipeline" method used in social psychological research which minimizes social influences on expressed attitudes. Lastly, in terms of data collection, due to initially low response rates to participate in the the program by residents and difficulty matching busy resident schedules with training times, the number of residents in the study was lower than initially expected (67 instead of 75), limiting the statistical power somewhat.

The overall findings of the present study suggest directions for researchers to pursue in the future. First, this type of study could be extended to other populations, including both physicians at other levels of training and other health professionals with clinical responsibilities that involve direct communication with patients. Second, a more comprehensive approach to studying psychosocial attitudes of residents would involve focusing not only on

the role of the cognitive component of attitudes, beliefs, and the behavioral component, behavioral intentions in this study, but also the affective component. Future research should attempt to assess the role of all three attitude components and the relationships between them. Third, given that it is clear from the findings that psychosocial attitude components do not equate with interview skill, research should advance to studying these two variables separately. Medical education programs and research should focus simulaneously on both how to improve residents psychosocial attitudes as well as how to most effectively teach interviewing skills. As future research clarifies these issues and allows for greater comprehension of the processes involved in physicians' attitudes toward psychosocial issues in patient care, ultimately improvements in the training of physicians and the patient care which they provide should result.

APPENDIX A
CORRELATION MATRIX
BY RATER

Correlation Matrix for Beliefs, Intentions, and Skill Level Following Training By Rater

	Skill Level Following Training (PRS) Rater 1	Rater 2	Average
Beliefs			
Group 1 (Control)			
PBS-pre	-.09	-.14	-.12
PBS-post	-.13	-.11	-.13
PBS-difference	-.09	-.14	-.06
Group 2 (Content)			
PBS-pre	.20	.38	.31
PBS-post	.12	.29	.18
PBS-difference	-.10	-.15	-.14
Group 3 (Affect)			
PBS-pre	-.12	-.23	-.19
PBS-post	-.19	-.27	-.25
PBS-difference	-.10	-.05	-.08
Total			
PBS-pre	.19	.13	.17
PBS-post	-.06	-.06	-.07
PBS-difference	-.36**	-.27*	-.34**

*p<.05
**p<.01

APPENDIX B
BELIEF SCORES BY SPECIALTY

Physician Belief Scale Scores by Residency Specialty

Specialty	PBS-pre	PBS-post
Surgical N=2	82.5	78.5
Medical N=32	74.4	74.5
Pediatric N=19	69.7	65.5
Psychiatric N=14	55.5	56.2

REFERENCES

Accreditation Council for Graduate Medical Education. (1986). Essentials of accredited residencies in graduate medical education: 6 special requirements for residency training in family practice. In Directory of Residency Training Programs (pp. 23-28). New York: American Medical Association.

Almy, T.P. (1989). The gastroenterologist and the graying of America. American Journal of Gastroenterology, 84, 464-468.

Altchek, E.D. (1988). Informed consent. Plastic and Reconstructive Surgery, 82, 920.

American Board of Internal Medicine, Subcommittee on Evaluation of Humanistic Qualities in the Internist. (1983). Evaluation of humanistic qualities in the internist. Annals of Internal Medicine, 99, 720-724.

American Board of Pediatrics, Medical Ethics Subcommitee. (1987). Teaching and evaluation of interpersonal skills and ethical decision making in pediatrics. Pediatrics, 79, 829-833.

Ashworth, C.D., Williamson, P., & Montano, D. (1984). A scale to measure physician beliefs about psycho-social aspects of patient care. Social Science in Medicine, 19, 1235-1238.

Azjen, I. (1984). Attitudes. In R.J. Corsini (Ed.), Wiley encyclopedia of psychology, volume I (pp. 99-100). New York: Wiley.

Bartlett, E.E., Grayson, M., & Barker, R. (1984). The effects of physician communications skills on patient satisfaction, recall, and adherence. Journal of Chronic Disease, 37, 755.

Bass, D.M., Garland, T.N., & Otto, M.E. (1986). Characteristics of hospice patients and their care-givers. Omega Journal of Death and Dying, 16, 51-68.

Becker, H.S. & Geer, B. (1958). The fate of idealism in medical school. American Sociological Review, 23, 50-56.

Beckman, H.B., & Frankel, R.M. (1984). The effect of physician behavior on the collection of data. Annals of Internal Medicine, 101, 692-696.

Bem, D.J. (1972). Self-perception theory. In L. Berkowitz (Ed.), Advances in experimental social psychology, vol. 6 (pp. 2-57). New York: Academic Press.

Bird, J. & Cohen-Cole, S.A. (1990). The three function model of the medical interview: An educational device. In Hale, M. (Ed.). Models of Consultation-Liaison Psychiatry (pp. 65-88). Switzerland: Karger.

Blizek, W.L. & Finkler, D. (1977). Teaching human values in medicine. Journal of Medical Education, 52, 858-859.

Burack, R.C. & Carpenter, R.R. (1983). The predictive value of the presenting complaint. Journal of Family Practice, 16, 749-754.

Carter, W.B., Inui, T.S., & Kukull, W.A. (1982). Outcome based doctor-patient interaction analysis: II. Identifying effective provider and patient behavior. Medical Care, 20, 550-559.

Christie, R. & Merton, R.K. (1958). Procedures for the sociological study of the values climate of medical school. Journal of Medical Education, 33, 125-153.

Cope, D.W., Linn, L.S., Leake, B.D., & Barrett, P.A. (1986). Modifications of residents' behavior by preceptor feedback of patient satisfaction. Journal of General Internal Medicine, 1, 394-398.

Cox, A., Holbrook, D., & Rutter, M. (1981). Psychiatric interviewing techniques. VI. Experimental study: eliciting feelings. British Journal of Psychiatry, 139, 144-152.

Cox, A., Hopkinson, K. & Rutter, M. (1981). Psychiatric interviewing technique. II. Naturalistic study: eliciting factual information. British Journal of Psychiatry, 138, 283-291.

Cox, A., Rutter, M., & Holbrook, D. (1981). Psychiatric interviewing techniques. V. Experimental study: eliciting factual information. British Journal of Psychiatry, 139, 29-37.

Davis, D. & Ostrom, T.M. (1984). Attitude measurement. In R.J. Corsini (Ed.), Wiley encyclopedia of psychology, vol. 1 (pp. 100-102). New York: Wiley.

DeGroot, L. (1987). Pliable but not receptive: concerning the marginal influence of a medical psychology course on the socialization process of doctors. Medical Education, 21, 419-425.

DeMonchy, C., Richardson, R., Brown, R.A., & Harden, R.M. (1988). Measuring attitudes of doctors: the doctor-patient rating. Medical Education, 22, 231-239.

DiMatteo, M.R. & Hays, R. (1980). The significance of patients' perceptions of physician conduct: a study of patient satisfaction in a family practice center. Journal of Community Health, 6, 18-34.

DiMatteo, M.R., Hays, R., & Prince, L.M. (1986). Relationship of physicians' nonverbal communication skill to patient satisfaction, appointment noncompliance, and physician workload. Health Psychology, 5, 581-594.

Dornbush, R.L., & Singer, P., Brownstein, E.J., & Freedman, A.M. (1984). Measurement of psychosocial attitudes in medical students. Journal of Medical Education, 59, 59-61.

Dornbush, R.L., Singer, P., Brownstein, E.J., & Freedman, A.M. (1985). Maintenance of psychosocial attitudes in medical students. Social Science in Medicine, 20, 107-109.

Dwyer, J.W., Detweiler, N.L., & Kosch, S.G. (1988). Medical students and comprehensive patient care: attitudes, perceived competence and demonstrated ability. Medical Education, 22, 19-26.

Eron, L.D. (1955). Effect of medical education on medical students' attitudes. Journal of Medical Education, 30, 559-565.

Evans, B.J., Kiellerup, F.D., Stanley, R.O., Burrows, G. & Sweet, B. (1987). A communication skills program for increasing patients' satisfaction with general practice consultaions. British Journal of Medical Psychology, 60, 373-378.

Ewan, C.E. (1987). Attitudes to social issues in medicine: a comparison of first-year medical students with first-year students in non-medical faculties. Medical Education, 21, 25-31.

Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention, and behavior: an introduction to theory and research. Reading, MA: Addison-Wesley.

Fletcher, C. (1980). Listening and talking to patients. I. The problem. British Medical Journal, 281, 845-847.

Fox, R.C. (1957). Training for uncertainty. In R.K. Merton, G. Reader, & P.L. Kendall (Eds.), The student physician (pp. 207-241). Cambridge: Harvard University Press.

Frankel, R.M. (1984). From sentence to sequence: understanding the medical encounter through micro-interactional analysis. Discourse Process, 7, 135-170.

Gerber, L.A. (1987). Experiences of forgiveness in physicians whose medical treatment was not successful. Psychological Reports, 61, 236.

Glaser, R. (1951). Predicting achievement in medical school. Journal of Applied Psychology, 35, 272-276.

Goldberg, D.P. (1980). Training family doctors to recognize psychiatric illness with increased accuracy. Lancet, II, 521-523.

Goldberg, R.J., Novack, D.H., Fulton, J.P. & Wartman, S.A. (1985). A survey of psychiatry and behavioral science curricula in primary care residency training. The Journal of Psychiatric Education, 33, 3-11.

Goldberg, D.P., Steele, J.J., Johnson, A., & Smith, C. (1982). Ability of primary care physicians to make accurate ratings of psychiatric symptoms. Archives of General Psychiatry, 39, 829-833.

Gordon, L.V. & Mensh, I.N. (1962). Values of medical students at different levels of training. Journal of Educational Psychology, 53, 48-51.

Greenfield, S., Kaplan, S., & Ware, J.E. (1985). Expanding patient involvement in care: effects on patient outcomes. Annals of Internal Medicine, 102, 520-528.

Hall, J.A., Roter, D.L., & Katz, N.R. (1988). Meta-analysis of correlates of provider behavior in medical encounters. Medical Care, 26, 657-675.

Hammond, K.R., & Kern, F., Jr. (1959). Teaching comprehensive medical care. Cambridge: Harvard University Press.

Heszen-Klemens, I. & Lapinska, E. (1984). Doctor-patient interaction, patients' health behavior and effects of treatment. Social Science in Medicine, 19, 9-16.

Kaplan, S.H., Greenfield, S., & Ware, J. (1989). Impact of the doctor-patient relationship on the outcomes of chronic disease. In Stewart, M. & Roter, D. (Eds.) Communicating with medical patients. Newbury Park: Sage.

Kaplan, C., Lipkin, M., & Gordon, G.H. (1988). Somatization in primary care: patients with unexplained and vexing medical complaints. Journal of General Internal Medicine, 3, 177-190.

Kern, D.E., Grayson, M., Barker, L.R., Roca, R.P., Cole, K.A., Roter, D., & Golden, A.S. (1989). Residency training in interviewing skills and the psychosocial domain of medical practice. Journal of General Internal Medicine, 4, 421-431.

Larsen, K.M., & Smith, C.K. (1981). Assessment of nonverbal communication inthe patient-physician interview. Family Practice, 12, 481-485.

Lazare, A. (1989). Three functions of the interview. In Lazare, A. (Ed.), Outpatient psychiatry: diagnosis and treatment. Baltimore: Williams & Wilkins, 153-157.

Lazare, A., Eisenthal, S., Frank, A., & Stoeckle, J.D. (1976). Studies on a negotiated approach to patienthood. In Gallagher, E.B. (Ed.), The doctor-patient relationship in the changing health scene (pp. 78-183). Washington D.C.: U.S. Department of Health, Education, and Welfare, Government Printing Office.

Lazare, A., Lipkin, M., & Putnam, S.M. (1990). The functions of the medical interview. In Lipkin, M., Putnam, S.M. & Lazare, A. (Eds.) The medical interview. New York: Springer-Verlag.

Levinson, W., Kaufman, K., & Dunn, P.M. (1990). House Staff attitudes toward psychosocial aspects of patient care. Teaching and Learning in Medicine, 2, 89-94.

Lipkin, M., Quill, T.E., & Napodano, R. (1984). The medical interview: A core curriculum for residencies in internal medicine. Annals of Internal Medicine, 100, 277-284.

Maisiak, R., Meredith, R.L., Boker, J., Rider-Gordon, B., & Scott, L.K. (1980). Change in medical student's attitudes toward social issues after a course in behavioral science. The Journal of Psychiatric Education, 4, 309-312.

Markham, B. (1979). Can a behavioral sciences course change medical students' attitudes? Journal of Psychiatric Education, 3, 44-54.

Marteau, T.M., Humphrey, C., Matoon, G., Kidd, J., Lloyd, M., & Horder, J. (1991). Factors influencing the communication skills first-year clinical medical students. Medical Education, 25, 127-134.

McGuire, W.J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), Handbook of social psychology, third edition (pp. 234-311). Reading, MA: Addison-Wesley.

Merkel, W.T., Margolis, R.B., & Smith, R.C. (1990). Teaching humanistic and psychosocial aspects of care: Current practices and attitudes. Journal of General Internal Medicine, 5, 34-41.

Merton, R., Reader, G.G., & Kendall, P.L. (1957). The student physician. Cambridge: Harvard University Press.

Orth, J.E., Stiles, W.B., Scherwitz, L., & Hennrikus, D. (1987). Patient exposition and provider explanation in routine interviews and hypertensive patients' blood pressure control. Health Psychology, 6, 29-42.

Ostrom, T.M. (1984). Attitude theory. In R.J. Corsini (Ed.), Wiley Encyclopedia of psychology, Volume I (pp.). New York: Wiley.

Panel on the General Professional Education of the Physician and College Preparation for Medicine. (1984). Physicians for the twenty-first century, the GPEP report. Washington, DC: Association for American Medical Colleges.

Parlow, J. & Rothman, A. (1974). Attitudes towards social issues in medicine of five health science faculties. Social Science in Medicine, 8, 351-358.

Platt, F.W., & McMath, J.C. (1979). Clinical hypocompetence: The interview. Annals of Internal Medicine, 91, 898-902.

Reader, G.G., & Goss, M.E. (1967). Comprehensive medical care and teaching. Ithaca: Cornell University Press.

Reinhardt, A.M. & Gray, R.M. (1972). A social psychological study of attitude change in physicians. Journal of Medical Education, 47, 112-117.

Rezler, A.G. (1974). Attitude changes during medical school: a review of the literature. Journal of Medical Education, 49, 1023-1030.

Rich, E.C., Crowson, T.W., & Harris, I.B. (1987). The Diagnostic Value of the Medical History: perceptions of internal medicine physicians. Archives of Internal Medicine, 147, 1957-1960.

Richards, T. (1990). Chasms in communication. British Medical Journal, 301, 1407-1408.

Rosenberg, J.I. (1965). Attitude changes in dental and medical students during professional education. Journal of Dental Education, 29, 399.

Rosenberg, M.J. & Hovland, C.I. (1960). Cognitive, affective, and behavioral components of attitude. In M.J. Rosenberg et al. (Eds.), Attitude organization and change: an analysis of consistency among attitude components (pp. 72-97). New Haven, CT: Yale University Press.

Roskin, G., Carsen, M.L., Rabiner, C.J., & Marell, S.K. (1988). Attitudes toward patients among different mental health professional groups. Comprehensive Psychiatry, 29, 188-194.

Roskin, G. & Marell, S.K. (1988). Differences in attitudes toward patients among medical specialties. International Journal of Psychiatry in Medicine, 18, 223-233.

Roter, D.L., Cole, K.A., Kern, D.E., Barker, L.R., & Grayson, M. (1990). An evaluation of residency training in interviewing skills and the psychosocial domain of medical practice. Journal of General Internal Medicine, 5, 347-354.

Roter, D.L. & Hall, J.A. (1987). Physicians' interviewing styles and medical information obtained from patients. Journal of General Internal Medicine, 2, 325-329.

Roter, D.L., Hall, J.A., & Katz, N.R. (1987). Relations between physicians' behaviors and analogue patients' satisfaction, recall, and impressions. Medical Care, 25, 437-445.

Roter, D.L., Hall, J.A., & Katz, N.R. (1988). Patient-physician communication: a descriptive summary of the literature. Patient Education and Counseling, 12, 99-119.

Schon, D.A. (1983). Reflective practitioner, how professionals think in action. New York: Basic Books.

Shapiro, J. (1991). Does a behavioral science rotation change residents' self-assessed psychosocial attitudes and behavior. Family Practice Research Journal, 11, 107-119.

Simpson, M.A. (1980). Clinical psycholinguistics: The languages of illness and healing. New York: Irvington.

Simpson, M., Buckman, R., Stewart, M., Maguire, P., Lipkin, M., Novack, D., & Till, J. (1991). Doctor-patient communication: The Toronto consensus statement. British Medical Journal, 303, 1385-1387.

Smith, R.C. & Hoppe, R.B. (1991). The patient's story: Integrating the patient- and physician-centered approaches to interviewing. Annals of Internal Medicine, 115, 470-477.

Smith, R.C., Osborn, G, Hoppe, R.B., Lyles, J.S., Van Egeren, L., Henry, R., Sego, D., Alguire, P., & Stoffelmayr, B. (1991). Efficacy of a one-month training block in psychosocial medicine for residents. Journal of General Internal Medicine, 6, 535-543.

Starfield, B., Steinwachs, D., Morris, I., Bause, G., Siebert, S., & Westin, C. (1979). Patient provider agreement about problems: influence on outcome of care. JAMA, 242, 344-346.

Stoeckle, J.D., & Billings, J.A. (1987). The history of history-taking: The medical interview. Journal of General Internal Medicine, 2, 119-127.

Streit, U. (1980). Attitudes towards psycho-social factors in medicine: an appraisal of the ATSIM scale. Medical Education, 14, 259-266.

Thurstone, L.L. & Chave, E.J. (1929). The measurement of attitude. Chicago: University of Chicago Press.

Tinker, L.J. (1991). Attitude formation and attitude change. Dundas, Canada: Hanna Newcombe.

Waitzkin, H. (1984). Doctor-patient communication: Clinical implications of social scientific research. Journal of the American Medical Association, 252, 2441-2446.

Williamson, P.R., Smith, R.C., Kern, D.K., Lipkin, M., Barker, L.R., Hoppe, R.B., & Florek, J. (1992). The Medical Interview and Psychosocial Aspects of Medicine: Block Curricula for Residents. Journal of General Internal Medicine, 7, 235-242.

Zajonc, R.B. (1980). Feeling and thinking: preferences need no inferences. American Psychologist, 35, 151-175.

Zanna, M.P. & Rempel, J.K. (1988). Attitudes: a new look at an old concept. In D. Bar-Tal & A.W. Kruglanski (Eds.), The social psychology of knowledge (pp.315-334). Cambridge: Cambridge University Press.

Zeldow, P.B. & Daugherty, S.R. (1987a). The stability and attitudinal correlates or warmth and caring in medical students. Medical Education, 21, 353-357.

Zeldow, P.B. & Daugherty, S.R. (1987b). A brief scale to measure humanistic attitudes toward doctor-patient relations. Unpublished manuscript.

Zimbardo, P.G. & Leippe, M.R. (1991). The psychology of attitude change and social influence. Philadelphia: Temple University Press.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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